DOCUMENT RESUME

ED 173 378 TM 008 966

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TITLE An Exploration of Levels of Use of the Innovation in the Evaluation of a Teaching Reading in Content Areas Staff Development Project.
PUB DATE 12 Apr 79
NOTE 44p.; Paper presented at the Annual Meeting of the American Educational Research Association (63rd, San Francisco, California, April 8-12, 1979) ; Best copy available

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Adoption (Ideas); Check Lists; *Content Reading; Evaluation Criteria; Faculty Development; *Instructional Innovation; *Interviews; Program Evaluation; *Reading Improvement; Reading Programs; Secondary Education; *Secondary School Teachers; *Use Studies
IDENTIFIERS Levels of Use Interview; *Levels of Use of the Innovation; Teaching Reading in Content Areas

ABSTRACT

High school teachers of reading, mathematics, social science, and science participated in a faculty development program, Teaching Reading in Content Areas (TRICA). A focused interview system, Levels of Use of Innovation (LOU) measured the extent to which teachers used TRICA in their classrooms. There are eight levels of use: non-use, orientation, preparation, mechanical, routine, refinement, integration, and renewal. Each level is operationally defined by seven categories: knowledge, acquiring information, sharing, assessing, planning, status reporting, and performing. Interview data collected from 27 teachers indicated that 25 were using TRICA, mostly at the mechanical level. Teachers were most confident using the TRICA strategies labeled structured overview, vocabulary development, and grouping. Teachers focused on events related to the immediate use of TRICA, rather than on long-term effects, and were more concerned about facilitating instructional methodology than with meeting individual student needs. Results favored the use of TRICA and were consistent with previous research. (CP)

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AN EXPLORATION OF LEVELS OF USE OF THE INNOVATION IN THE EVALUATION OF A TEACHING READING IN CONTENT AREAS STAFF DEVELOPMENT PROJECT

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TM008 966

Paper presented at the annual meeting of the American Educational Research Association, San Francisco, California, April 12, 1979. Section 31.09

Abstract

An evaluator who seeks to document effects of an educational system innovation must first ascertain if the innovation was used and how it was used by change agents. Two concepts, Levels of Use of the Innovation (LoU) and Innovation Configuration, have been developed by the Texas R & D Center, Austin, Texas, to document innovation implementation. The author proposes a paper for a discussion on (1) why the Levels of Use (LoU) concept was employed in evaluating a secondary school staff development project; (2) a characterization of how LoU was used in the situation; (3) description of the data collection, data management, and analysis procedures; and (4) evaluation results.

The analysis of data shows results favoring use of the TRICA program. Consonant with previous research the first time users of the program focused instructional efforts primarily on day-to-day use of the innovation. The writer contends that at the time of the evaluation study changes in use of the innovation were more to facilitate instructional methodologies than to meet students' individual learning needs. Thus, not much effort was expended in assessing immediate instructional impact on students at that point. Teachers' attempts to master immediate use of the innovation often resulted in inefficient use.

This paper will attempt to focus real world evaluation issues which loom from direct efforts to document innovation implementation effects.

AN EXPLORATION OF LEVELS OF USE OF THE INNOVATION IN THE EVALUATION OF A TEACHING READING IN CONTENT AREAS STAFF DEVELOPMENT PROJECT

Introduction

How many times have you observed high school teachers affront students with "What do you mean you can't read an assignment? Of course you can read! You're in high school, aren't you?" It also is familiar for high school content area specialists to argue "I'm a content specialist! I don't know anything about reading--and besides, that's the reading teacher's job!" Such phrases as these often reflect the frustrations and surge of hopelessness of content teachers who do not know specifically how to incorporate reading techniques into their daily plans (Bjurstrom, 1978, p. 85).

Many such situations need not arise since the reading research literature abounds with results of tried practices and suggestions for aiding the content teacher working with those students whose reading skills are either minimal or below grade level.

Content Area Reading

Bumeister (1974) found that learning was facilitated if content teachers taught reading skills prerequisite to an understanding of their content field. Estes and Staiger (1973) reported on a 1973 consortium which sought to establish that concern with reading in content areas was effectively met when reading instruction was made an integral part of each discipline.

Earle and Sanders (1973) advised that teachers should give more direction than merely saying, "Read so-and-so pages for tomorrow," while Cunningham and Shablak (1975) reported on an actual process whereby teachers guided the reading of the assignment with specific directions, such as "Skip this page, read the third paragraph carefully, skim part four," and so on. Palmer (1975) felt it necessary that every subject teacher of every level be prepared to help students meet new demands in reading and to develop the special strategies those demands require. Smith (1976) called this approach "bookthinking," and added that students need to be shown how to take an active attitude about using books. Putnam (1974) was among those advocating a program which helped students express the main idea(s) of a textbook assignment in concise statements.

Herber (1978) and Robinson (1975) published books that emphasized the teaching of reading in the content areas. Herber's book suggested ways to teach students how to read their content materials and increase their understanding of the content at the same time. Robinson emphasized helping classroom teachers improve their reading and study programs by guiding students in the acquisition of independent strategies for working with ideas in print.

Russell (1974) sounded a note of controversy, however, by questioning whether reading can be taught in the content area by those teachers unwilling and untrained to do so. McDonald (1971), on the other hand, contended that effective fusing of reading and content is possible in secondary level curricula but that it involves total faculty commitment. Axelrod (1975) agreed that reading instruction must be the concern of all teachers in the school.

The importance of faculty commitment was supported by several writers. Bullerman and Franco (1975) described an effective in-service program for teachers in Hillsborough County, Florida. Schleich (1971) made the point that secondary schools must provide basic teacher training for secondary reading development as well as for ongoing in-service education.

Roe (1972) advocated in-service workshops where content teachers are taught how to rewrite material for low achievers in reading. Duke and Powers (1973) maintained that the key to reading success lies in recognizing just what the textual materials being used demand, and devising ways to assure that the students are better able to cope with those demands. Bundy (1974) contended most effective reading instruction occurs when the teacher adapts materials and instructional techniques to fit the unique needs of individual students.

Weiss (1975) agreed that if the reading teachers helped others realize the specificity of reading skills in various content areas they could then suggest useful methods and materials that would help teachers teach reading in their own classrooms. Although Rosewell (1973) stated that few teachers believe "Every teacher is a teacher of reading," he firmly endorsed school-wide in-service programs to improve teaching reading in content areas.

Evaluation of the High School Teaching Reading In Content Areas (TRICA) Staff Development Project

During the 1977-78 school year, the School Board of the Dallas Independent School District earmarked a significant portion of local funding to a Teaching Reading in Content Areas (TRICA) project. The project was conceived, developed, and operated by the District's Secondary Reading Department as a staff development effort focused to help middle school and high school level teachers help students overcome specific reading problems they encounter in the language arts, mathematics, science and social studies teaching/learning situations. Building principals, department chairpersons, deans of instruction, reading resource teachers, and teams of content area classroom teachers participated together in TRICA training sessions. Five structured training sessions for six (6) groups were officially held December 1, 1977 through May 28, 1978. Both middle school and high school representatives participated together in the same training group. This paper reports evaluation procedures and results for high school teachers who participated in the project.

The basic training modality consisted of the project management's (1) facilitating interactive group training processes; (2) presenting

lecturettes; (3) reviewing and viewing a series of ten (10) videotapes on the demonstration of Teaching Reading in Content Areas (TRICA) model developed by Drs. Harold Herber and Joan Nelson of TRICA, Inc., Homer, New York, (see Appendix A); (4) on-site followup by project facilitators; and (5) synthesizing ideas and concepts through simulations, hands-on experiences, demonstrations, and bibliographic references, i.e., manuals, texts, learning guides, and so forth. As training objectives varied, participants were assigned to training groups according to schools or common content area. The TRICA staff development project was managed by the director along with six (6) secondary reading facilitators.

Objectives of the Project

While this year was the first of a five-year developmental TRICA staff development program, project managers identified the following expectations for participating teachers:

1. to become aware of some specific learning problems students encounter when reading in the mathematics, science, social studies, and language arts content areas,

2. to identify and internalize personally what constitutes reading instruction in content areas,

3. to become aware of and begin to understand various methods and strategies used in reading instruction in content areas,

4. to begin to apply at least one (1) TRICA instructional strategy to teaching reading in a specific subject or content area teaching/reading situation.

Purpose of the Evaluation

The purpose of the evaluation was to delineate, capture, and report descriptive and useful information to key decision makers relative to the determination of operation and effects of the TRICA staff development. Interim narrative feedback, process evaluation reports, and product evaluation reports were written and presented to project managers.

Evaluation Design

The design used for collection of product evaluation data might be diagrammed as follows:

Treatment	(R)	X	O_1
Control	(R)		O_2

The treatment X represents exposure to TRICA staff development. Observations O_1 and O_2 are the Levels of Use (LoU) interview/rating system.

Some major evaluation questions were:

1. Was the TRICA staff development project implemented as designed?
2. What was the level of assistance (type and amount) given to project participants by project management?
3. What was the level of attendance of staff development participants?
4. What were the specific differences in teaching strategies between content area teachers who participated in the project and those who did not?

For practical purposes, this paper has been organized to treat procedures, results and discussion, and further implications relative to major evaluation question 4.

Procedure

Sample

The evaluation was concerned with high school teachers involved in the project. One teacher from each of the four content areas (math, social studies, language arts, and science) participated for impact high schools. Fifteen high schools participated in the study. Impact high schools represented each sub-district in the Dallas Independent School District. Six (6) high school training groups were designated as follows: Group 1 - 15 participants from 2 high schools; Group 2 - 16 participants from 2 high schools; Group 3 - 16 participants from 2 high schools; Group 4 - 21 participants from 3 high schools; Group 5 - 22 participants from 3 high schools; and Group 6 - 12 participants from 3 high schools. The total population was 102. The teacher population was 52. Data were available on a sample of 27 randomly selected treatment teachers.

The control group (n=21) was randomly selected from a comparable teacher population.

Data Collection

Data were collected using the standardized Levels of Use (LoU) interview system which was developed, tested, and validated by The Procedures for Adopting Educational Innovations Project at the Research and Development Center for Teacher Education, University of Texas at Austin (see Appendix B for description of the LoU system of innovation evaluation).

The LoU Interview

The procedure used to measure extent to which high school teachers used new TRICA strategies was the LoU focused interview. Interviewers (N=5) had made prior arrangements to arrive at classrooms during the teachers' (interviewees) planning period or another scheduled non-teaching period. For collecting data, small portable cassette tape recorders were used. Prior to the interview teachers were told that the interview would be taped. Sixty-minute cassette tapes were used for recording purposes. For an interview lasting thirty minutes or shorter, one side of the tape was used. Both sides of the tape were used for an interview lasting more than thirty minutes. At no time was there more than one interview to a side of a tape. While scheduling and conducting interviews, interviewers took care not to disrupt the normal flow of schools' activities.

Taped interviewee responses were processed by each interviewer and rated by the same interviewer according to the LoU system. Ratings were recorded on an LoU rating sheet. The rating sheet made possible the precise identification and categorization of each TRICA strategy used by teachers. Ratings were not written in the teachers' presence. Either immediately following the interview or at the end of each school day, each interviewer recorded each rating. No sample interview lasted more than 30 minutes. As interviewers completed ratings, all rating sheets and tape recordings were submitted to the Senior Evaluator for recording, reliability checks, and storage. At specific times during data collection, interview tapes were rated by another rater. In such cases, individual raters were paired randomly with each other. Each rater either agreed or disagreed with the other rater on a particular interview. The percentage of agreement each rater obtained was an index which was used to decide whether some raters were more accurate than others. The χ^2 test was used to determine whether significant differences existed among raters. It also served as an index of reliability. If two raters could not agree, a third independent rater was used. Eleven percent (N=5) of the interviews required a third rating. In 80% of these cases, the third rater agreed with one of the first two. The one remaining tape was partially inaudible and was eventually determined not to fit any LoU. The tape was discarded from the sample. This was a control tape. Thus, discarding this tape did not affect treatments.

The procedure of "rate until agreement" was used in view of the theoretical context of LoU categories. LoU categories are discrete. It is unacceptable to have an "average" category rating, i.e., LoU IVB.5. Because of the high interrater reliability (average % agreement = 89.9), the Senior Evaluator had confidence in the majority of single ratings. A TRICA strategy was considered "used" when (a) first use had been stated by the teacher and established by the interviewer, (b) a teacher correctly named the strategy used, and (c) the teacher correctly described specific tactics for its use (or uses), according to predetermined specified criteria, and/or explicated a sample of a product depicting its use. Acceptable TRICA strategies included Structured Overview, Vocabulary Development, Levels Guide, Patterns Guide, Reasoning Guide, and Grouping --

all according to the Herber model for Teaching Reading in Content Areas (see Appendix C for TRICA Configuration). Thus, the first standard question asked was, "Are you currently using TRICA according to the Herber model?" The order of further questions and probes which followed depended upon the answer to the first question and succeeding information. The LoU interview was considered a "focused interview." (See Appendix D for generic LoU interview branching format and questions in interview instrument.)

In addition to taping interviews and recording ratings for each subject on separate rating sheets, interviewers coded data according to (1) identification number (last four (4) digits of the teacher's social security number); (2) tape number; (3) date of interview; (4) site; (5) interviewer; and (6) content area. Raters had no advance knowledge of treatment and control assignments.

The Senior Evaluator assigned treatment and control codes and managed data processing and analysis. Data processing conducted at the District's computation center yielded descriptive statistics.

Results and Discussion

Results from this evaluation study are presented and discussed here. First, the genre of use by teachers is described according to configuration and content area. Configuration is described in terms of variations within its major parts, herein called TRICA strategies: Structured Overview, Vocabulary Development, Levels Guide, Patterns Guide, Reasoning Guide, Grouping, and General. These data are displayed in Figure 1 and Table 1. Second, behaviors of use are described with reference to their categorization on the eight LoU dimensions (Table 2). Third, the Levels of Use system is further described with reference to normative behavior patterns (Figure 2).

Configuration and Content Area

Teachers demonstrated most confidence in using Structured Overview, Vocabulary Development, and Grouping strategies, according to the Herber TRICA model. On the other hand, teachers felt least comfortable using Levels Guide, Patterns Guide, and Reasoning Guide. Teachers of each content area (mathematics, social studies, science, language arts) applied new skills in Structured Overview, Vocabulary Development, and Grouping (see Figure 1 and Table 1). Teachers of mathematics and science, particularly, experienced difficulties with Patterns Guide and Reasoning Guide.

Distribution of Levels of Use (LoU)

Figure 3 illustrates the LoU distributions for TRICA staff development treatment and control groups. In general, it can be seen that 93% treatment teachers were users (n=25). The exception among treatments was a small group (7%) of non-users (n=2) that demonstrated they were neither

using TRICA, orienting themselves to TRICA, nor establishing a time to begin using it. Among users (LoU III-VI), the overall highest percentage was represented at LoU III Mechanical (63%) and LoU IVA Routine (22%). There were no teachers in this sample at overall LoU V Integration and LoU VI Renewal. One hundred percent of control teachers (n=21) evidenced they were nonusers.

Table 2 compares LoU category distributions for treatment and control groups. This table clearly supports the inverse tendency for treatments and controls. Table 3 presents rating distributions by category and Level of Use for the treatment group only.

According to Table 3 a few teachers had begun to refine their behaviors, i.e., to make changes in response to formal or informal evaluation of how their use of TRICA affected students. This behavior was evidenced by ratings of IVB. One teacher, a past user with long time use in another school system, was at the Renewal stage in categories Knowledge and Acquiring Information. She was knowledgeable about TRICA and how to use it. Currently, she was acquiring additional information in order to enhance her use of TRICA.

Rating data in Table 3 focus on the treatment group and are summarized and explained by categories below:

1. Knowledge. In general, teachers (n=16) were beginning first use of TRICA strategies and were not fully knowledgeable about them. They knew on a day-to-day basis the requirements for using TRICA and were more knowledgeable about short-term effects than long-term methods and effects of the use of TRICA strategies. Few teachers were beginning to learn cognitive and affective effects of TRICA strategies on students and ways for increasing potential impact on students.

2. Acquiring Information. Teachers (n=6) were soliciting management information about such aspects as logistics, scheduling techniques, and ideas for reducing amount of time and work required of them. On the other hand, in general, teachers were making no special efforts to seek information as a part of ongoing use of TRICA.

3. Sharing. Teachers (n=12) were discussing management and logistical issues related to the use of TRICA: others (n=6) were describing their current use of TRICA with little or no reference to ways of changing its use. Several (n=3) were discussing their individual methods of modifying use of TRICA to increase learning outcomes.

4. Assessing. Most teachers (n=16) were examining their use of TRICA with respect to problems of scheduling, logistics, and resources, while others (n=6) were assessing routinely with no planning to change their use based on that assessment. Three teachers were assessing in terms of change for greater impact on students.

5. Planning. In general, teachers focused on events primarily related to immediate use of TRICA (n=14). Limited projection was given

toward variation in how TRICA would be used.

6. Status Reporting. The majority of teachers (n=17) reported logistics, time management, resource organization, and so forth were the crux of most personal efforts to use TRICA.

7. Performing. In general, teachers (n=17) managed TRICA strategies with varying degrees of efficiency. Methodology often lacked anticipation of immediate consequences. The flow of strategy implementation often revealed uncertainty in teachers. Changes made to improve student response primarily were associated with organization and logistical problems.

Normative Data Comparisons

In summary, the preponderant behavioral patterns evidenced by teachers at overall LoU III (Table 3) were (1) the demonstration of stepwise attempts to master tasks required to implement TRICA strategies (n=17) and (2) the exhibition of few if any changes to ongoing use of TRICA strategies along with limited preparation made to improving consequences for students. The above LoU III behaviors should not be considered unusual according to data emerging from the LoU research reports from the Teacher R&D Center (Loucks, 1976).

Further Evaluation and Project Development Implications

As the District continues to implement the innovation, each user will experience developmental phenomena. Some users may continue at less efficient levels such as III, while others will continue to show higher level user behaviors. However, this could be acknowledged and accepted as a legitimate step in growth toward sophisticated use. Implications for project management focus needs for staff development organized (1) to appropriately help LoU III users and (2) to facilitate growth within a non-threatening learning environment. In other words, TRICA managers could use the data base provided by the evaluation study reported in this paper to continue developing the project during the next four (4) years instead of providing a "one shot deal" workshop. Project managers also could develop specific plans for working with first year inservice teachers (nonusers) who made a commitment to use TRICA but were unable to establish a definite time to begin. Managers also could continue to structure training for those users who were trying higher-level strategies and expressed need for help in managing and evaluating instruction.

With the DISD evaluation study as presented here, developmental progress should be expected both in TRICA implementation and in the use of staff development modus operandi. As the LoU system is iterated in the evaluation of TRICA, appropriate applications of generated data bases should lead to better staff development and less anxiety in the content area teaching/learning situations. The most desirous effect would be the students' enhanced reading achievement and increased learning and understanding in the content areas.

TRICA STRATEGY	KNOWLEDGE	APPLICATION KNOWLEDGE	PRACTICE I	PRACTICE II	A	B	C	D
STRUCTURED OVERVIEW	23	17	5	12	X	X	X	X
VOCABULARY DEVELOPMENT	21	12	3	9	X	X	X	X
LEVELS GUIDE	21	5	16	0	X			
PATTERNS GUIDE	6	6	2	4	X			
REASONING GUIDE	6	3	1	2	X			
GROUPING	24	24	2	17	X	X	X	X

KNOWLEDGE

States what the specific strategy is and criteria for its use

APPLICATION KNOWLEDGE

Explicates step-wise procedure for use in specific teaching/learning situation(s)

PRACTICE I

Evidence of use one (1) time

PRACTICE II

Evidence of use two (2) times or more

A = Social Studies

B = Mathematics

C = Language Arts

D = Science

Figure 1. Teaching Reading in Content Areas Configuration.

Table 1

Summary of Configuration Checklist Data
for the Teaching of Reading in Content Areas
(TRICA)

Structured Overview

23	Teacher knows what structured overview is
18	Teacher knows how to use structured overview
15	Teacher uses structured overview prior to reading a related passage in the information source
	Teacher uses structured overview in such a way as to
12	1. demonstrate the relationships among the words which form the overall concept
11	2. provide a framework into which new ideas and information can be fitted
8	3. develop a context from familiar words which will help clarify definitions and meanings of new words
	Teacher has used structured overview
4	1 time
12	2 or more times
	Name unit(s) structured overview was used with

Vocabulary Development

21	Teacher knows what criteria for vocabulary development are and has used them
12	Teacher has utilized students' experiences in vocabulary development
11	Teacher has incorporated previous learnings in vocabulary development
12	Teacher knows what definition exercise is
11	Teacher knows how to make definition exercise
12	Teacher has made definition exercise
	Teacher has used definition exercise
3	1 time
12	2 or more times
8	Teacher knows what meaning exercise is
6	Teacher knows how to make meaning exercise
	Teacher has used meaning exercise
1	1 time
7	2 or more times

Levels Guide

10	Teacher knows what expository writing is
10	Teacher knows what narrative writing is
	Teacher can explain what a concept or organizing idea is
	Explain here

Levels Guide, continued

24 Teacher knows the three levels of comprehension
24 1. literal
24 2. interpretive
23 3. applied
23 Teacher knows how to construct a three level reading guide
18 Teacher has used declarative statements in reading guide
16 Teacher has made a three level reading guide
Teacher has used reading guide
5 1 time
15 2 or more times
Describe how it guides a reader

_____

_____

_____

Patterns Guide

6 Teacher knows what the four patterns of organizations are
6 Teacher can recognize the dominant pattern in a reading selection
7 Teacher knows how to construct a patterns guide
4 Teacher knows when to use a patterns guide
6 Teacher has constructed a patterns guide
Teacher has used a patterns guide
2 1 time
4 2 or more times
Describe how it guides a reader

_____

_____

_____

Reasoning Guide

6 Teacher knows what a reasoning guide is
6 Teacher knows how to construct a reasoning guide
5 Teacher has constructed a reasoning guide
Teacher has used a reasoning guide
1. As a prediction guide
3 1 time
2 2 or more times
2. as a reading guide
1 time
4 2 or more times
3. as a post-reasoning guide
2 1 time
3 2 or more times

Reasoning Guide, continued

2 Teacher knows what a post-reasoning activity is
2 Teacher knows how to make a post-reasoning activity
Teacher has used a post-reasoning activity
1 1 time
2 2 or more times

Grouping

24 Teacher knows what grouping is
10 Teacher knows various techniques to group
Give examples

_____

_____

15 Teacher knows when to group
Teacher has grouped students by pairs
1 time
6 2 or more times
Teacher has grouped 4-6 students
2 1 time
17 2 or more times
15 Teacher knows how to monitor groups
13 Teacher has monitored groups

General

Teacher feels more (most) comfortable using
12 structured overview
6 definition exercise
6 meaning exercise
1 3 level reading guide
6 patterns guide
3 cause/effect
4 comparison/contrast
4 simple listing
2 time order
4 reasoning guide
pre-reasoning guide
1 post-reasoning guide
10 grouping

Teacher feels less (least) comfortable using
5 structured overview
2 definition exercise
2 meaning exercise
7 3 level reading guide
5 patterns guide
___ cause/effect
___ comparison/contrast
___ simple listing
___ time order
5 reasoning guide
1 pre-reasoning guide
2 post-reasoning guide
2 grouping

TABLE 2

LEVEL OF USE (LoU) DISTRIBUTION FOR TREATMENT GROUP AND CONTROL GROUP WITH RESPECT TEACHING READING IN CONTENT AREAS (TRICA)

	Level	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Status Reporting	Performing	Overall LoU
0	Non-Use	20	22 (2)[a]	21(1)	21(2)	21(2)	19 (1)	23(2)	22(2)
I	Orientation	2 (1)	0	2(1)	1	2	2	0	1
II	Preparation	0	0	0	0	0	0	0	0
III	Mechanical Use	16[b]	6	12	16	14	17	17	17
IVA	Routine	4	8	6	6	8	5	6	6
IVB	Refinement	4	2	3	3	2	3	2	2
V	Integration	0	0	1	0	1	0	0	0
VI	Renewal	1	1	0	0	0	0	0	0
ND	User is not doing	0	8	1	0	0	0	0	0
NI	Not enough information	1	1	2	1	0	2	0	0

[a] Numeral in parenthesis represents a treatment rating.

[b] All ratings below the broken line represent those for treatments.

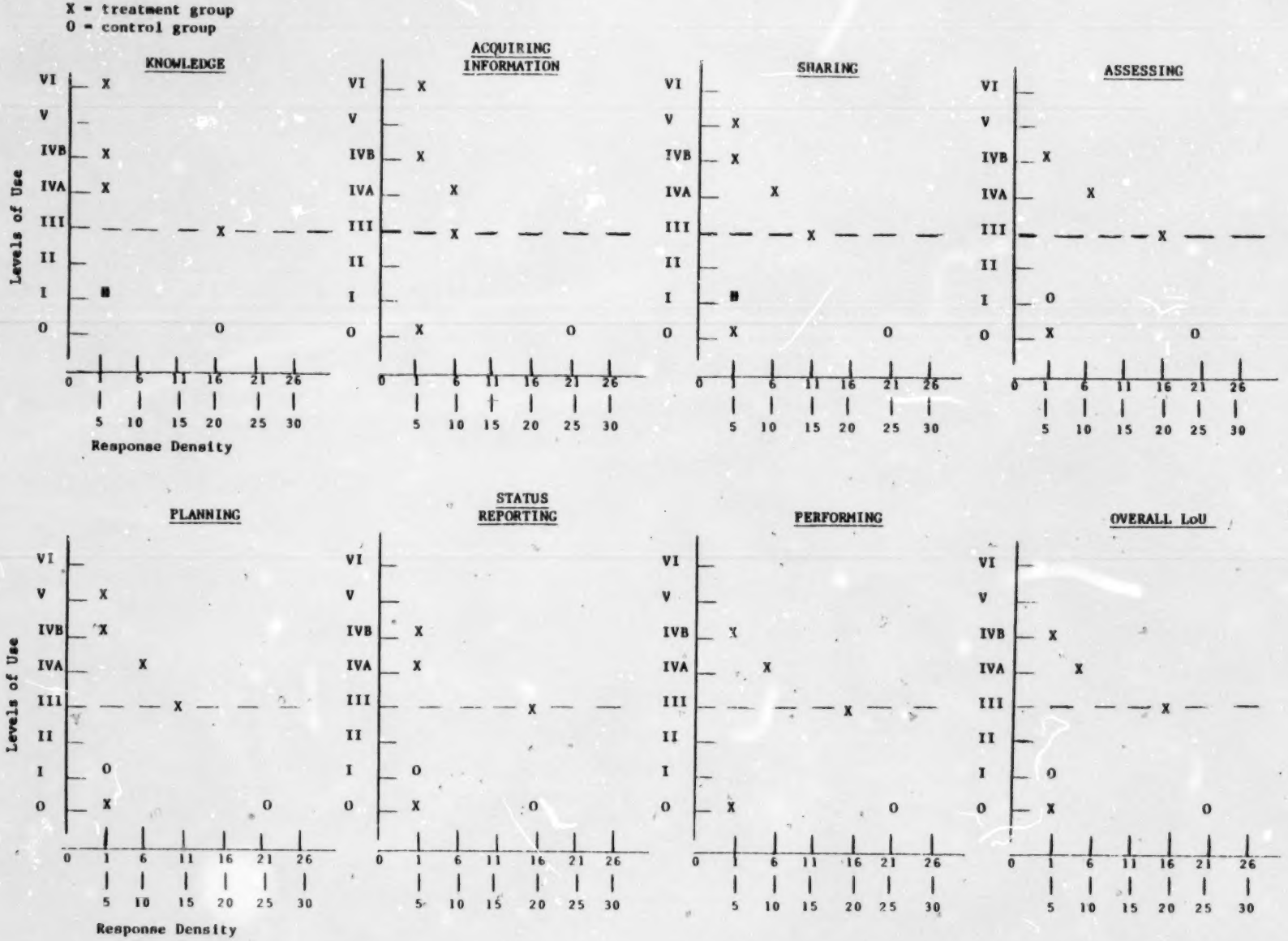

Figure 2. Distribution of Independent LoU Categorical Ratings for Treatments and Controls

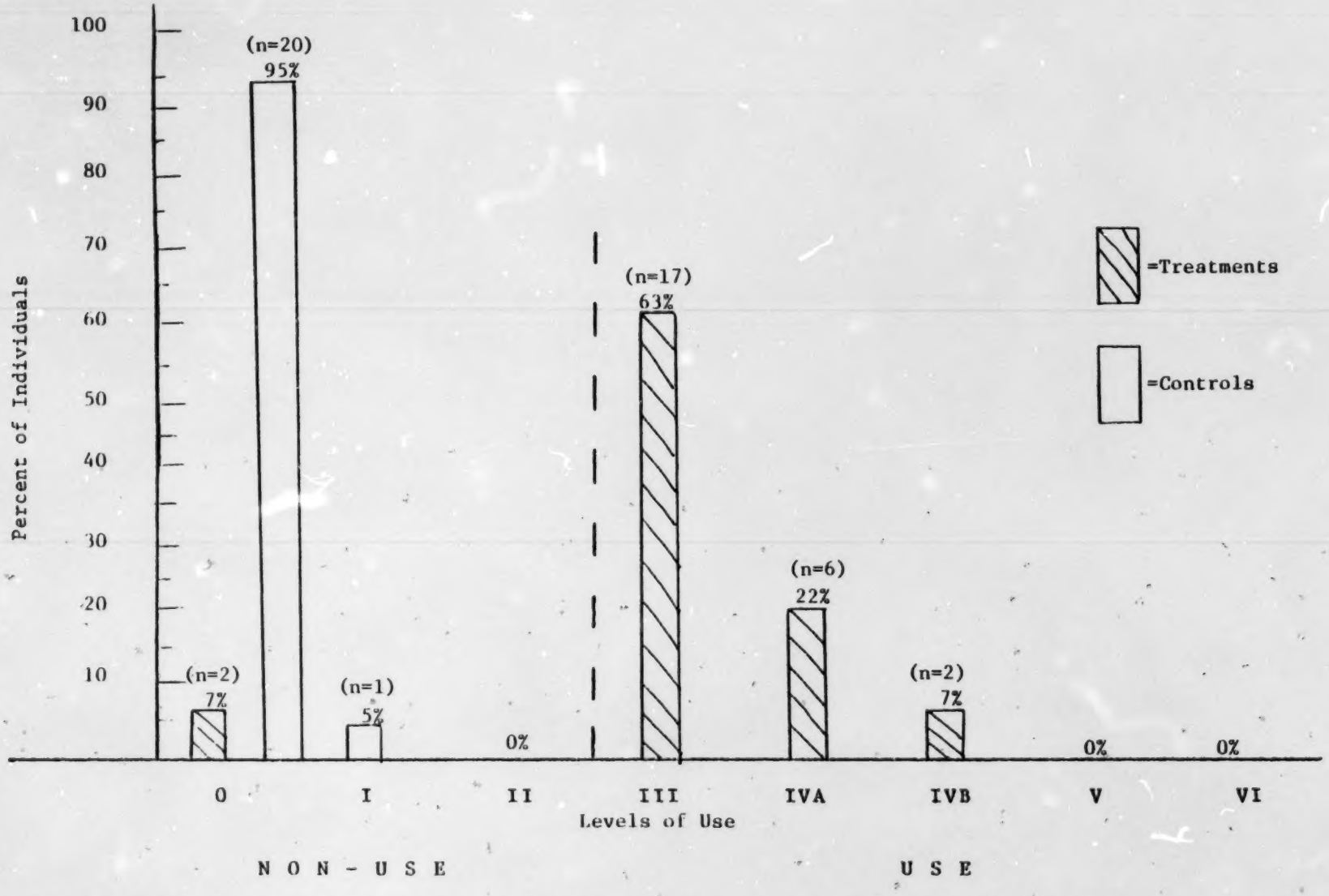

Figure 3. Distribution of Levels of Use (LoU) of Treatments and Controls for Teaching Reading in Content Areas (TRICA)

TABLE 3

LEVEL OF USE (LoU) DISTRIBUTION FOR
TREATMENT GROUP WITH RESPECT TO
TEACHING READING IN CONTENT AREAS (TRICA)

	Level	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Status Reporting	Performing	Overall LoU
0	Non-Use	0	2	1	2	2	1	2	2
I	Orientation	1	0	1	0	0	0	0	0
II	Preparation	0	0	0	0	0	0	0	0
III	Mechanical Use	16	6	12	16	14	17	17	17
IVA	Routine	4	8	6	6	8	5	6	6
IVB	Refinement	4	2	3	3	2	3	2	2
V	Integration	0	0	1	0	1	0	0	0
VI	Renewal	1	1	0	0	0	0	0	0
ND	User is not doing	0	8	1	0	0	0	0	0
NI	Not enough information	1	0	2	0	0	1	0	0

APPENDIX A

The Videotaped Staff Development Training on

TEACHING READING IN CONTENT AREAS

by

TRICA Consultants, Inc.
Homer, New York 13077

Videotape One: "What's in It for You?"

Identifies the particular definition of "Teaching Reading in Content Areas" on which the course is based. Excerpts from classroom instruction in various subjects at grades 6, 9, and 10 provide a preview of the "instructional options" which are developed in the subsequent sessions. Teachers who participated in the development of the course are identified, as are the expected outcomes and activities of the course.

Videotape Two: "Vocabulary Development: Application"

Demonstrates ways to use the technical vocabulary of various subject areas to (a) teach the content of the subject; (b) demonstrate the structure of the curriculum; (c) develop an experiential context for new ideas; (d) discover what students already know about what you are teaching. The session also demonstrates ways to reinforce both the definitions and meanings of words.

Videotape Three: "Vocabulary Development: Rationale"

Explains the criteria for selecting technical vocabulary to be emphasized in a given lesson or unit of study and then illustrates the application of the criteria. The distinction between presenting words and teaching words is clarified. The reinforcement of both definitions and meanings of words is further illustrated.

Videotape Four: "Levels of Comprehension: Application"

Reading comprehension is presented as a three-step, or three-level, process. The process is explained and demonstrated through lessons in social studies and mathematics. Factors essential to the successful development of students' competence with this process are explained.

Videotape Five: "Levels of Comprehension: Rationale"

A context is established for an analysis of levels of comprehension. A structured overview is developed to portray the differences between reading teachers and content area teachers with respect to reading instruction. An analysis of each level of comprehension is made along with an explanation of the relationship among all three levels. The development of a guide for levels of comprehension is explained. Excerpts from lessons review the application of levels in different subjects and grade levels.

Videotape Six: "Organizational Patterns: Application"

Presents the four basic organizational patterns which are found in most expository material. Several excerpts from lessons demonstrate how students can be guided in the use of these patterns as they read expository material. The lesson excerpts show how patterns are applicable within subjects and across grade levels.

Videotape Seven: "Organizational Patterns: Rationale"

Deals with three questions: (a) what relationship exists between levels of comprehension and organizational patterns; (b) does the same relationship exist among the four organizational patterns as exists among the three levels of comprehension; (c) is there some preferable order of usage between levels and patterns?

Videotape Eight: "Reasoning in Content Areas: Application"

Presents activities which promote students' reasoning, capture their interests, and ultimately motivate them to read.

Videotape Nine: "Reasoning in Content Areas: Rationale"

Analyzes the reasoning process in light of the characteristics of the other instructional options presented thus far in the course. It explains how the reasoning process can be made instructionally manageable. The use of prediction to promote reasoning is demonstrated.

Videotape Ten: "Student Interaction: Management Issues"

Presents five management issues related to the use of small-group interaction in content area classrooms. Each issue is illustrated by excerpts from demonstration lessons. Suggestions are made for ways to deal with the issues.

APPENDIX B

The Levels of Use Concept

Levels of Use of the Innovation (LoU) describes behaviors exhibited by individuals from before any knowledge of the innovation exists, through preparation to begin use, through development of skills and knowledges necessary for use to become routine, and finally through refinement, integration, and renewal with respect to use of the innovation (Hall, Loucks, Rucherford, & Newlove, 1975). The eight Levels of Use (see Figure 4) have been operationally defined. Each Level of Use is defined for each of seven categories of innovation user knowledge and activity that cut across innovations. The categories, Knowledge, Acquiring Information, Sharing, Assessing, Planning, Status Reporting, and Performing, provide a wide range of behaviors that can be specified for individuals. In addition, Decision Points have been defined to further delimit differences between the Levels of Use. Operational definitions are displayed on the LoU Chart (Figure 3) (Hall et al., 1975). Two years of cross-sectional and longitudinal studies in schools and universities across the country have verified that these eight Levels of Use exist in individuals as defined, with respect to a variety of innovations.

Figure 4

LEVELS OF USE OF THE INNOVATION: BEHAVIORAL INDICATORS

Level of Use		Behavioral Indices of Level
VI	Renewal	The user is seeking more effective alternatives to the established use of the innovation.
V	Integration	The user is making deliberate efforts to coordinate with others in using the innovation.
IVB	Refinement	The user is making changes to increase outcomes.
IVA	Routine	The user is making few or no changes and has an established pattern of use.
III	Mechanical Use	The user is using the innovation in a poorly coordinated manner and is making user-oriented changes.
II	Preparation	The user is preparing to use the innovation.
I	Orientation	The user is seeking information about the innovation.
0	Non-use	No action is being taken with respect to the innovation.

Figure 5.[1] The LoU Chart: A Framework For Analyzing Innovation Adoption

LEVELS OF USE

SCALE POINT DEFINITIONS OF THE LEVELS OF USE OF THE INNOVATION	CATEGORIES						
	KNOWLEDGE	ACQUIRING INFORMATION	SHARING	ASSESSING	PLANNING	STATUS REPORTING	PERFORMING
Levels of Use are defined under the most recent conceivably different types of behavior and pattern of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each broad breakdown is a range of behaviors, but is limited by a set of Identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.	That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.	Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and viewing films.	Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.	Examines the potential or actual use of the innovation or some aspect of it. This can be a mental assessment or can involve actual collection and analysis of data.	Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules activities, meets with others to organize and/or coordinate use of the innovation.	Describes personal stand at the present time in relation to use of the innovation.	Carries out the actions and activities detailed in operationalizing the innovation.
LEVEL 0 NON-USE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation and is doing nothing toward becoming involved.	Knows nothing about the or similar innovations or has only very limited general knowledge or efforts to develop innovations in the area.	Takes little or no action to solicit information beyond reviewing descriptive information about this or similar endeavors when it happens to come to personal attention.	Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists.	Takes no action to analyze the innovation, its characteristics, possible use, or consequences of use.	Schedules no time and specifies no steps for the study or use of the innovation.	Reports little or no personal involvement with the innovation.	Takes no discernable action toward learning about or using the innovation. The innovation and/or its accouterments are not present or in use.
DECISION POINT A	Takes action to learn more detailed information about the innovation.						
LEVEL I ORIENTATION: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon user and user system.	Knows general information about the innovation such as origin, characteristics, and philosophical requirements.	Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops.	Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use.	Analyzes and compares materials, content, requirements for use, evaluation reports, potential outcomes, strengths and weaknesses for purpose of making a decision about use of the innovation.	Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation.	Reports presently aligning self to what the innovation is and is not.	Explores the innovation and resource means for its use by talking to others about it, reviewing descriptive information and sample materials attending orientation sessions and observing others using it.
DECISION POINT B	Makes a decision to use the innovation by establishing a time to begin.						
LEVEL II PREPARATION: State in which the user is preparing for first use of the innovation.	Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients.	Seeks information and resources specifically related to preparation for use of the innovation in own setting.	Discusses resources secured for initial use of the innovation. Joins others in pre-use training and in planning for resources, logistics, schedules, etc., in preparation for first use.	Analyzes acquired requirements and acquired resources for initial use of the innovation.	Identifies steps and procedures entailed in acquiring resources and organizing activities and events for initial use of the innovation.	Reports preparing self for initial use of the innovation.	Studies reference materials in depth organizes resources and logistics schedules and receives pilot training in preparation for initial use.
DECISION POINT C	Begins first use of the innovation.						
LEVEL III MECHANICAL USE: State in which the user focuses most effort on the short-term day-to-day use of the innovation with little time for reflection. Changes in use are made more in most user needs than client needs. The user is primarily engaged in a sequence planned to master the tasks required to use the innovation, often resulting in disjointed and superficial use.	Knows on a day-to-day basis the requirements for using the innovation in more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.	Solicits management information about such things as logistics scheduling techniques and ideas for reducing amount of time and work required of user.	Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, how and logistical problems related to use of the innovation.	Examines own use of the innovation with respect to problems of logistics, management, time schedules, resources and general reactions of clients.	Plans for organizing and managing resources activities and events related primarily to immediate ongoing use of the innovation. Planned for changes address managerial or logistical issues with a short-term perspective.	Reports that kinships time management, resource organization etc. has the focus of most personal efforts in use the innovation.	Manages innovation with varying degrees of efficiency. Often lacks articulation of immediate consequences. The flow of actions in the user and client's is often disjointed unclear and uncertain. When changes are made they are primarily in response to logistical and organizational problems.
DECISION POINT D-1	A routine pattern of use is established.						
LEVEL IV A ROUTINE: Use of the innovation is established. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.	Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress.	Makes no special efforts to seek information as a part of ongoing use of the innovation.	Describes current use of the innovation with little or no reference to ways of changing use.	Limits evaluation activities to those activities previously required with little attention paid to findings for the purpose of changing use.	Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Routine focuses on routine use of resources personnel, etc.	Reports that personal use of the innovation is going along satisfactorily with few if any problems.	Uses the innovation smoothly with minimal management problems over time. There is little variation in pattern of use.
DECISION POINT D-2	Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.						
LEVEL IV B REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.	Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients.	Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes.	Discusses own methods of modifying use of the innovation to change client outcomes.	Assesses use of the innovation for the purpose of changing current practices to improve client outcomes.	Develops intermediate and long-range plans that anticipate possible and focused steps resources and events designed to enhance client outcomes.	Reports varying use of the innovation in order to change client outcomes.	Explores and experiments with alternative combinations of the innovation with existing practices to maximize client environment and to optimize client outcomes.
DECISION POINT E	Initiates changes in use or innovation based on input of and in coordination with what colleagues are doing.						
LEVEL V INTEGRATION: State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.	Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients.	Solicits information and opinions for the purpose of collaborating with others in use of the innovation.	Discusses efforts to increase client impact through collaboration with others on personal use of the innovation.	Appraises collaborative use of the innovation in terms of client outcomes and strengths and weaknesses of the integrated effort.	Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients.	Reports spending time and energy collaborating with others about integrating own use of the innovation.	Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others.
DECISION POINT F	Begins exploring alternatives to or major modifications of the innovation presently in use.						
LEVEL VI RENEWAL: State in which the user re-evaluates the quality of use of the innovation, explores major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and examines new goals for self and the system.	Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use.	Seeks information and resources about other innovations as alternatives to the present innovation or for major modifications in the innovation.	Focuses discussions on identification of major alternatives or refinements for the current innovation.	Analyzes advantages and disadvantages of major modifications or alternatives to the present innovation.	Plans activities that involve pursuit of alternatives to enhance or replace the innovation.	Reports considering major modifications of or alternatives to present use of the innovation.	Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes.

Procedures for Adopting Educational Innovations Project. Research and Development Center for Teacher Education, University of Texas at Austin, 1975. N.I.E. Contract No. NIE C 74-0087.

[1] Hall, G.E., Loucks, S.F., Rutherford, W. L., & Newlove, B.W. Levels of Use of the Innovation: A framework for analyzing innovation adoption. The Journal of Teacher Education, 1975 (26) 1, 52-56.

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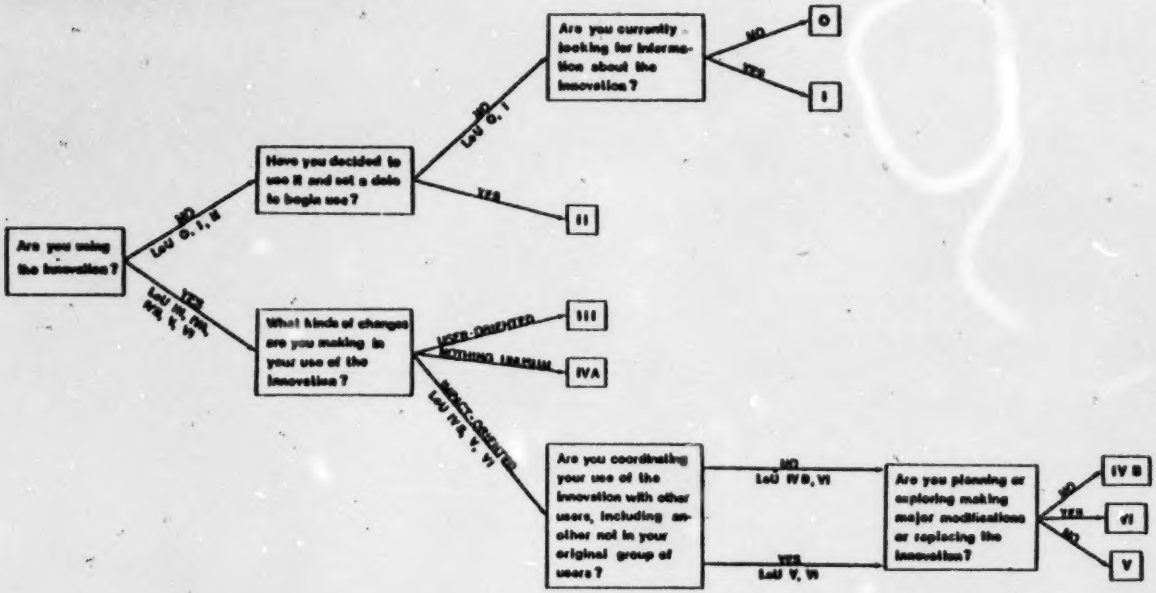
Figure 6.[2] Overview of Branching Format of the LoU Focused Interview.



[2]From: Loucks, S.F., Newlove, B.W., & Hall, G.E. Measuring Levels of Use of the Innovation: A manual for trainers, interviewers, and raters. Austin, Texas: Research and Development Center for Teacher Education, the University of Texas at Austin, 1976.

UTR&D/CBAM, 1976

LEVEL OF USE RATING SHEET

Tape #: Site: Interviewer:
Date: / / I.D. #: Rater:

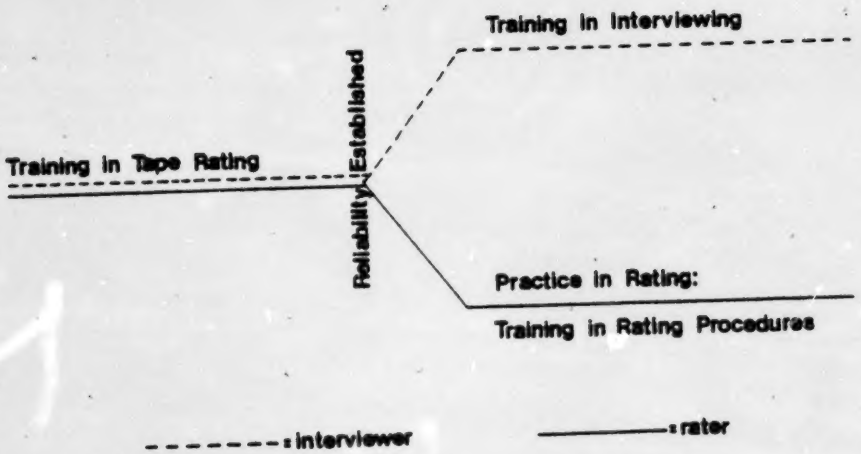
Level	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Status Reporting	Performing	Overall LoU
Non-Use D.P. A	0	0	0	0	0	0	0	0
Orientation D.P. B	I	I	I	I	I	I	I	I
Preparation D.P. C	II	II	II	II	II	II	II	II
Mechanical Use D.P. D-1	III	III	III	III	III	III	III	III
Routine D.P. D-2	IVA	IVA	IVA	IVA	IVA	IVA	IVA	IVA
Refinement D.P. E	IVB	IVB	IVB	IVB	IVB	IVB	IVB	IVB
Integration D.P. F	V	V	V	V	V	V	V	V
Renewal	VI	VI	VI	VI	VI	VI	VI	VI
User is not doing:	ND	ND	ND	ND	ND	ND	ND	ND
No information in interview:	NI	NI	NI	NI	NI	NI	NI	NI

Past User _____ Estimated past LoU _____

The amount of information in the interview was:	insufficient for rating	1	2	3	4	5	6	7	very adequate for rating
The interviewee:	does not fit on the chart	1	2	3	4	5	6	7	fits well on the chart
The interviewee:	was very difficult to interview	1	2	3	4	5	6	7	was no problem to interview

Figure 7
The LoU Rating Sheet

Figure 8. Suggested Timeline for Interviewer/Rater Training



Additional information concerning the LoU innovation adoption system might be obtained from:

The Research and Development Center
for Teacher Education
Education Annex
The University of Texas at Austin
Austin, Texas 78712

Attn: Dr. Gene E. Hall
Program Director
Procedures for Adopting
Educational Innovations/
CBAM Program

TRICA STRATEGY	KNOWLEDGE	APPLICATION KNOWLEDGE	PRACTICE I	PRACTICE II	A	B	C	D
STRUCTURED OVERVIEW								
VOCABULARY DEVELOPMENT								
LEVELS GUIDE								
PATTERNS GUIDE								
REASONING GUIDE								
GROUPING								

KNOWLEDGE

States what the specific strategy is and criteria for its use

APPLICATION KNOWLEDGE

Explicates step-wise procedure for use in specific teaching/learning situation(s)

PRACTICE I

Evidence of use one (1) time

PRACTICE II

Evidence of use two (2) times or more

A = Social Studies

B = Mathematics

C = Language Arts

D = Science

Figure 9. Teaching Reading In Content Areas (TRICA) Configuration Schema.

APPENDIX D

GENERIC FOCUSED LoU INTERVIEW INSTRUMENT

0-II/III-VI	Are you currently using _____?

NO

Have you ever used it in the past? If so, when? Why did you stop?
(if yes, go to *, then return)

0/I-II	Have you made a decision to use _____ in the future?
I/II	If so, when will you begin use?
Knowledge	Can you describe _____ for me as you see it?
Acquiring Information	Are you currently looking for any information about _____ _____? What kinds? For what purposes?
Knowledge	What do you see as the strengths and weaknesses of _____ in your situation?
Assessing	At this point in time, what kinds of questions are you asking about _____? Give examples if necessary.
Sharing	Do you ever talk with others and share information about _____? What do you share?
Planning	What are you planning with respect to _____? Can you tell me about any preparation or plans you might have been making for the use of _____?
Final Question (Opinional)	Can you summarize for me where you see yourself right now in relation to the use of _____?

PAST USERS*

Can you describe for me how you organized your use of _____, what problems you found, what its effects appeared to be on students?

When you assess_____ at this point in time, what do you see as the strengths and weaknesses?

(Return to other nonuse questions.)

YES

Open-ended	Please describe for me how you use _____. (Ask sufficient questions to get configurations.)
Assessing/ Knowledge	What do you see as the strengths and weaknesses of _____ in your situation? (Have you made any attempt to do anything about weaknesses? Probe those they mentioned specifically.)
Acquiring Information	Are you currently looking for any information about _____? What kind? For what purpose?
LoU V*	Do you work with others in your use of _____? Have you made any changes in your use of _____ based on this coordination?
Sharing	Do you ever talk with others about _____? What do you tell them?
Assessing	(Have you considered any alternatives or different ways of doing things with the program?) Are you doing any evaluating, either formally or informally, that would affect your use of _____? Have you received any feedback from students that would affect the way you're using _____? What have you done with the information that you get?
III/IVA/IVB	Have you made any changes recently in how you use _____? What? Why? How recently? Are you considering making any changes?
Planning/ Status Reporting	Are you looking ahead to later this year, what plans do you have in relation to your use of _____?
III-IVB/V	Are you working with others outside your team in your use of _____?
III-V/VI	Are you considering or planning to make major modifications or replace _____at this time?

LoU V Probes*

1. How do you work together? What things do you share with each other?
2. How frequently?
3. What do you see as the effects of this collaboration?
4. Are you looking for any particular kind of information in relation to this collaboration?
5. Do you talk with others about your collaboration? If so, what do you share with them?
6. Have you made any formal or informal evaluation of how your collaboration is working?

*7. What plans do you have for this effort in the future?

Content Area_____

Checklist for Teaching Reading In Content Areas
(TRICA)

Structured Overview

_____ Teacher knows what structured overview is
_____ Teacher knows how to use structured overview
_____ Teacher uses structured overview prior to reading a related passage in the information source
Teacher uses structured overview in such a way as to
_____ 1. demonstrate the relationships among the words which form the overall concept
_____ 2. provide a framework into which new ideas and information can be fitted
_____ 3. develop a context from familiar words which will help clarify definitions and meanings of new words
Teacher has used structured overview
_____ 1 time
_____ 2 or more times
Name unit(s) structured overview was used with
_____

Vocabulary Development

_____ Teacher knows what criteria for vocabulary development are and has used them
_____ Teacher has utilized students' experiences in vocabulary development
_____ Teacher has incorporated previous learnings in vocabulary development
_____ Teacher knows what definition exercise is
_____ Teacher knows how to make definition exercise
_____ Teacher has made definition exercise
Teacher has used definition exercise
_____ 1 time
_____ 2 or more times
_____ Teacher knows what meaning exercise is
_____ Teacher knows how to make meaning exercise
Teacher has used meaning exercise
_____ 1 time
_____ 2 or more times

Levels Guide

_____ Teacher knows what expository writing is
_____ Teacher knows what narrative writing is
_____ Teacher can explain what a concept or organizing idea is
Explain here
_____

_____

Levels Guide, continued

_____ Teacher knows the three levels of comprehension
_____ 1. literal
_____ 2. interpretive
_____ 3. applied
_____ Teacher knows how to construct a three level reading guide
_____ Teacher has used declarative statements in reading guide
_____ Teacher has made a three level reading guide
Teacher has used reading guide
_____ 1 time
_____ 2 or more times
Describe how it guides a reader

_____

_____

_____

Patterns Guide

_____ Teacher knows what the four patterns of organizations are
_____ Teacher can recognize the dominant pattern in a reading selection
_____ Teacher knows how to construct a patterns guide
_____ Teacher knows when to use a patterns guide
_____ Teacher has constructed a patterns guide
Teacher has used a patterns guide
_____ 1 time
_____ 2 or more times
Describe how it guides a reader

_____

_____

_____

Reasoning Guide

_____ Teacher knows what a reasoning guide is
_____ Teacher knows how to construct a reasoning guide
_____ Teacher has constructed a reasoning guide
Teacher has used a reasoning guide
1. As a prediction guide
_____ 1 time
_____ 2 or more times
2. as a reading guide
_____ 1 time
_____ 2 or more times
3. as a post-reasoning guide
_____ 1 time
_____ 2 or more times

Reasoning Guide, continued

_____ Teacher knows what a post-reasoning activity is
_____ Teacher knows how to make a post-reasoning activity
Teacher has used a post-reasoning activity
_____ 1 time
_____ 2 or more times

Grouping

_____ Teacher knows what grouping is
_____ Teacher knows various techniques to group
Give examples

_____

_____

_____ Teacher knows when to group
Teacher has grouped students by pairs
_____ 1 time
_____ 2 or more times
Teacher has grouped 4-6 students
_____ 1 time
_____ 2 or more times
_____ Teacher knows how to monitor groups
_____ Teacher has monitored groups

General

Teacher feels more (most) comfortable using
_____ structured overview
_____ definition exercise
_____ meaning exercise
_____ 3 level reading guide
_____ patterns guide
- _____ cause/effect
- _____ comparison/contrast
- _____ simple listing
- _____ time order

_____ reasoning guide
_____ pre-reasoning guide
_____ post-reasoning guide
_____ grouping

Teacher feels less (least) comfortable using
_____ structured overview
_____ definition exercise
_____ meaning exercise
_____ 3 level reading guide
_____ patterns guide
___ cause/effect
___ comparison/contrast
___ simple listing
___ time order

_____ reasoning guide
_____ pre-reasoning guide
_____ post-reasoning guide
_____ grouping

References

Adams, Anne H., and R. Baird Shuman. "Singing To Build an Atmosphere for Secondary Reading." Journal of Reading 16: 20-24; October 1972.

Ahrendt, Kenneth M., and Shirley S. Haselton. "Informal Skills Assessment for Individualized Instruction." Journal of Reading 17: 52-57; 1973.

Axelrod, Jerome. "A Few Recommendations on How to Conduct In-Service Reading Instruction for Content-Area Teachers." English Journal 64: 81-82; February 1975.

Bjurstrom, Dixie Potter. "Reading as a Secondary School Subject." In Classroom-Relevant Research in the Language Arts. Washington, D.C.: ASCD, 1978, pp. 85-106.

Bullerman, Mary, and E. J. Franco. "Teach Content Material But Teach Reading, Too!" Journal of Reading 19: 21-23; October 1975.

Bundy, Lester L. "Our Current Reading Instruction Is Inadequate." The Reading Teacher 27: 774-77; May 1974.

Burmeister, Lou E. Reading Strategies for Secondary School Teachers. Reading, Massachusetts: Addison-Wesley Publishing Co., 1974.

Cunningham, Dick, and Scott L. Shablak. "Selective Reading Guide-O-Rama: The Content Teacher's Best Friend." Journal of Reading 18: 380-82; February 1975.

Earle, Richard A., and Peter L. Sanders. "Individualized Reading Assignments." Journal of Reading 16: 550-55; April 1973.

Ebel, R. L. "Estimation of the Reliability of Ratings." Psychometrika, 1951, 16 (4), 407-424.

Eichelberger, R. T. Evaluating ongoing instructional programs. In G. D. Borich (Ed.), Evaluating educational programs and products. Englewood Cliffs, N. J.: Educational Technology Publications, 1974.

Estes, Thomas H., and Ralph C. Staiger. "IRA Project Compass: An Overview." Journal of Reading 16: 111-14; April 1973.

Evans, W. J., & Sheffler, J. W. Degree of implementation: A first approximation. Paper presented at the annual convention of the American Educational Research Association, Chicago, April 1974.

Goodlad, J. I., Klein, M. R., & Associates. Behind the classroom door. Worthington, Ohio: Charles A. Jones, 1970.

Gross, N., Guiaquinta, J. B., & Bernstein, M. Implementing organizational innovations: A sociological analysis of planned educational change. New York: Basic Books, 1971.

Hall, G. E., & Loucks, S. F. A developmental model for determining whether or not the treatment really is implemented. Austin: Research and Development Center for Teacher Education, the University of Texas, 1976.

Hall, G. E., & Loucks, S. F. Rutherford, W. L., & Newlove, B. W. "Levels of Use of the Innovation: A Framework for Analyzing Innovation Adoption." The Journal of Teacher Education, 1975, 26 (1), 52-56.

Hall, G. E., Wallace, R. C., & Dossett, W. E. A developmental conceptualization of the adoption process within educational institutions. Austin: Research and Development Center for Teacher Education, the University of Texas, 1973.

Havelock, R. G. Planning for innovation through dissemination and utilization of knowledge. Ann Arbor: Center for Research on Utilization of Scientific knowledge, Institute for Social Research, the University of Michigan, 1971.

Herber, Harold L. Teaching Reading in Content Areas. (2 Ed.). Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1978.

Landis, John, Robert W. Jones, and Larry D. Kennedy. "Curricular Modification for Secondary School Reading." Journal of Reading 16: 374-78; February 1973.

Loucks, S. F. Cross sectional and logitudinal studies of innovation use utilizing the variable "Levels of Use of the Innovation. Paper presented at the annual convention of the Mid-South Educational Research Association, New Orleans, November 1976.

Loucks, S. F., Newlove, B. W., & Hall, G. E. Measuring Levels of Use of the Innovation: A manual for trainers, interviewers, and raters. Austin: Research and Development Center for Teacher Education, the University of Texas, 1976.

McDonald, Thomas F. "An All School Secondary Reading Program." Journal of Reading 14: 553-58; May 1971.

Miles, M. B. Innovation in education. New York: Bureau of Publication, Teachers College, Columbia University, 1964.

Okpalobi, Martis J. Evaluation of the High School Teaching Reading in Content Areas (TRICA) Staff Development Program. Dallas Independent School District, (Report No. SP78-294-41-01), Dallas, Texas, July 1978.

Palmer, William S. "Teaching Reading in Content Areas." Journal of Reading 19: 43-51; October 1975.

Putnam, Lillian R. "Don't Tell Them To Do It...Show Them How." Journal of Reading 16: 200-206; December 1972.

Robinson, H. Alan. Teaching Reading and Study Strategies: The Content Areas. Boston, Massachusetts: Allyn and Bacon, Inc., 1975.

Roe, Betty Daniel. "Teacher Prepared Material for Slow Readers." Journal of Reading 15: 277-79; January 1972.

Rogers, E. M., & Shoemaker, F. F. Communication of innovations. New York: Free Press, 1971.

Rosewell, Paul T. "We All Teach Reading." The Clearing House 48: 213-17; January 1972.

Russell, Sheldon N. "Crucial Problem Facing Secondary Education." Journal of Reading 17: 600-603; May 1974.

Sanders, Peter. "Reading and the English Teacher." English Journal 63: 59-60; September 1974.

Schleich, Miriam. "Groundwork for Better Reading in Content Areas." Journal of Reading 15: 119-26; November 1971.

Scriven, M. The methodology of evaluation. In Perspectives of Curriculum Evaluation. AERA Monograph Series of Curriculum Evaluation, Volume 1. Chicago: Rand McNally, 1967.

Smith, Carl Bernard. "Teaching Reading in the Secondary School." Educational Leadership 33: 509-12; April 1976.

Stallings, J., & Kaskowitz, D. Follow through classroom observation evaluation 1972-1973. Menlo Park, Calif.: Stanford Research Institute, 1974.

Stufflebeam, D. L., Foley, W. J., Gephart, W. J., Guba, E. G., Hammond, R. J., Merriman, H. O., & Provus, M. M. Educational evaluation and decision-making. Itasca, Ill.: F. E. Peacock, 1971.

Weiss, M. Jerry. "Understanding the Role of the Teacher of Readers." Theory into Practice 14: 173-78; June 1975.